

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A process for treating a chromate waste liquid containing an organic acid component and zinc component, said process comprising:

adding a chromium precipitation accelerating agent comprising at least one of a calcium component and a magnesium component and capable of increasing the pH of said chromate waste liquid to a pH of 10.3 or higher, to said chromate waste liquid to increase pH of said chromate waste liquid to have a first pH of 10.3 or higher and stirring to thereby precipitating precipitate a chromium component from said chromate waste liquid, adding an acid to lower the pH of the waste liquid from said first pH to a second pH of 10 or lower and stirring to precipitate a zinc component, and adding a flocculation agent to achieve sedimentation of the precipitate.

2. (original): A process according to claim 1, wherein said chromium precipitation accelerating agent comprises at least one of a calcium-containing inorganic compound and a magnesium-containing inorganic compound.

3. (original): A process according to claim 1, wherein said chromium precipitation accelerating agent comprises at least one compound selected from the group consisting of $\text{Ca}(\text{OH})_2$, CaCl_2 and MgCl_2 .

Claims 4-5 (canceled).

6. (currently amended): A process according to claim 1, wherein, prior to ~~said~~ adding said chromium precipitation accelerating agent, a chromium concentration of said chromate waste liquid is from 10 to 1,000 ppm by weight.

7. (original): A process according to claim 1, wherein said chromium precipitation accelerating agent comprises CaCl_2 and is added to said chromate waste liquid such that calcium of said CaCl_2 is in an amount of 500-1,000 mg per liter of said chromate waste liquid.

8. (original): A process according to claim 1, wherein said chromium precipitation accelerating agent comprises MgCl_2 and is added to said chromate waste liquid such that magnesium of said MgCl_2 is in an amount of 200-500 mg per liter of said chromate waste liquid.

9. (original): A process according to claim 1, wherein said chromate waste liquid is stirred, after said adding of said chromium precipitation accelerating agent.

10. (original): A process according to claim 9, wherein said chromate waste liquid is stirred for a period of time from 0.5 to 2 hr.

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11. (currently amended): A process according to claim 1, wherein said ~~chromate waste liquid comprises a zinc component, and wherein, after said adjusting, said first pH of said chromate waste liquid is decreased to a second pH that is 8 to 10 or higher, thereby decreasing a zinc concentration of said chromate waste liquid.~~

12. (original): A process according to claim 1, wherein said adjusting is conducted, while said chromate waste liquid is maintained at a temperature of 20°C or higher.

13. (original): A process according to claim 12, wherein said temperature is 25°C or higher.

14. (original): A process according to claim 13, wherein said temperature is 30°C or higher.

15. (previously presented): A process according to claim 1, further comprising:
maintaining said chromate waste liquid at said first pH for a period of time of 0.5 hr or longer; and

adding a flocculating agent to said chromate waste liquid, thereby accelerating said precipitation of said chromium component.

16. (previously presented): A process according to claim 15, wherein said flocculating agent comprises polyacrylamide.

17. (original): A process according to claim 2, wherein said chromium precipitation accelerating agent comprises said calcium-containing inorganic compound, and wherein said precipitated chromium component is separated from said chromate waste liquid, and then said chromate waste liquid is neutralized with an acid that is reactive with a calcium component dissolved in said chromate waste liquid, thereby turning said dissolved calcium component into a calcium-containing precipitate.

18. (original): A process according to claim 2, wherein said chromium precipitation accelerating agent comprises said magnesium-containing inorganic compound, and wherein said precipitated chromium component is separated from said chromate waste liquid, then said chromate waste liquid is neutralized with an acid, and then a dissolved magnesium component is removed from said chromate waste liquid by a reverse osmosis or an ion exchange.

19. (original): A process according to claim 18, wherein said acid is such that said dissolved magnesium component remains in a dissolved form even after said neutralization.

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20. (original): A process according to claim 1, further comprising maintaining said chromate waste liquid at said first pH, while said chromate waste liquid is stirred.

21. (previously presented): A process according to claim 1, wherein said first pH is from 10.3 to 12.5.

22. (canceled).

23. (previously presented): A process according to claim 1, wherein said first pH is from 10.3 to 12.5, and said first pH is maintained for a period of time to precipitate the chromium component.

24. (previously presented): A process according to claim 1, wherein said chromium precipitation accelerating agent comprises $\text{Ca}(\text{OH})_2$.

25. (currently amended): A process for treating a chromate waste liquid containing an organic acid component and zinc component, said process comprising the sequential steps of:

(a) adding a chromium precipitation accelerating agent that comprises at least one selected from the group consisting of CaCl_2 , $\text{Ca}(\text{NO}_3)_2$, MgCl_2 , $\text{Mg}(\text{NO}_3)_2$, and MgSO_4 , to said chromate waste liquid; and

(b) adding a basic pH adjusting agent that comprises at least one compound selected from the group consisting of NaOH, KOH and LiOH, to a product of the step (a) to increase pH of said chromate waste liquid to have a first pH of 10.3 or higher and stirring to precipitate precipitating a chromium component from said chromate waste liquid, adding an acid to lower the pH of the waste liquid from said first pH to a second pH of 10 or lower and stirring to precipitate a zinc component, and adding a flocculation agent to achieve sedimentation of the precipitate.

26. (previously presented): A process according to claim 25, wherein said chromium precipitation accelerating agent of the step (a) comprises at least one of CaCl_2 and MgCl_2 .

27. (previously presented): A process according to claim 25, wherein said basic pH adjusting agent comprises NaOH.

28. (new): A process according to claim 25, wherein said second pH is 8 to 10.

29. (new): A process according to claim 1, which comprises stirring to precipitate a chromium component for 30 minutes or longer.

30. (new): A process according to claim 11, wherein said acid is H_2SO_4 and the pH of the waste liquid is lowered to about 8.

31. (new): A process according to claim 1, wherein said flocculation agent comprises polyacrylamide.

32. (new): A process according to claim 25, which comprises stirring to precipitate a chromium component for 30 minutes or longer.

33. (new): A process according to claim 28, wherein said acid is H_2SO_4 and the pH of the waste liquid is lowered to about 8.

34. (new): A process according to claim 25, when said flocculation agent comprises polyacrylamide.

35. (new): A process for treating a chromate waste liquid containing an organic acid component and zinc component, said process comprising:

adding $\text{Ca}(\text{OH})_2$ to said chromate waste liquid and adjusting a pH of said chromate waste liquid to thereby precipitate a chromium component and zinc component from the waste liquid;
and

maintaining a pH of said chromate waste liquid in a vessel at a first pH of 10.3 or higher by controlling the volume of $\text{Ca}(\text{OH})_2$ added to said chromate waste liquid in said vessel and thereby precipitating a chromium component from said chromate waste liquid.

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36. (new): A process according to claim 35, wherein said pH of said chromate waste liquid is decreased from said first pH to a second pH that is 8 or higher in another vessel, thereby decreasing a zinc concentration of said waste liquid.

37. (new): A process according to claim 36, wherein said second pH is 8 to 10.